

FIG. 3

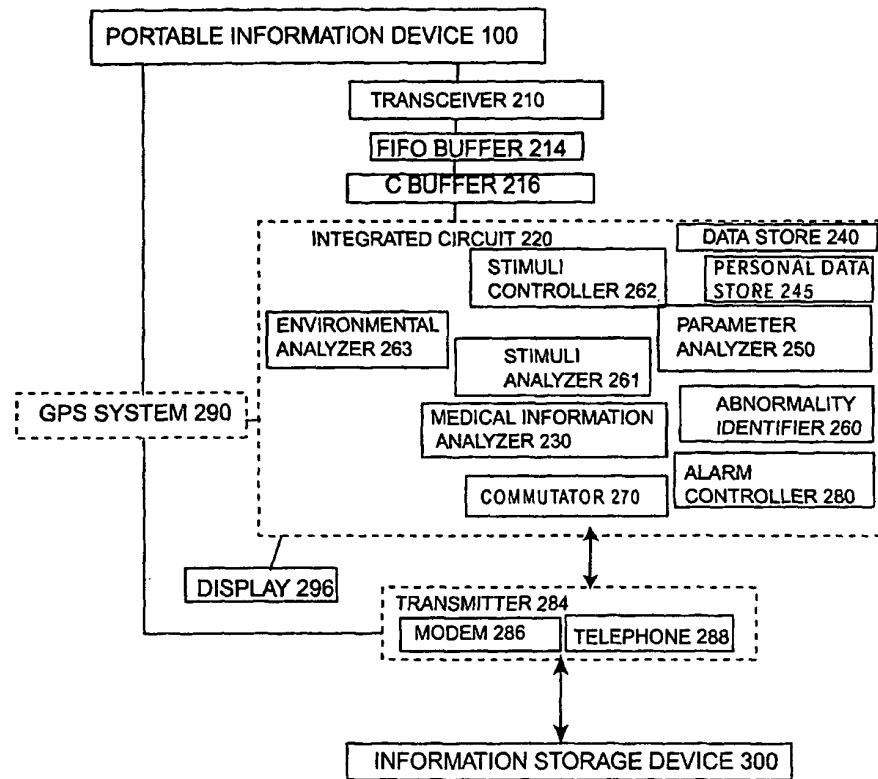


FIG. 4

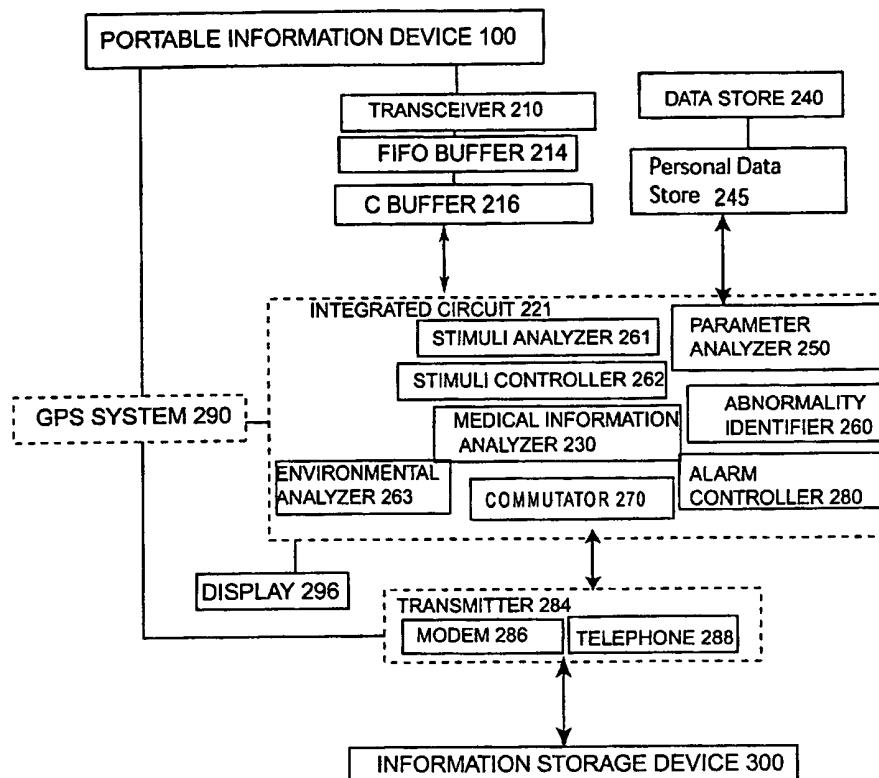
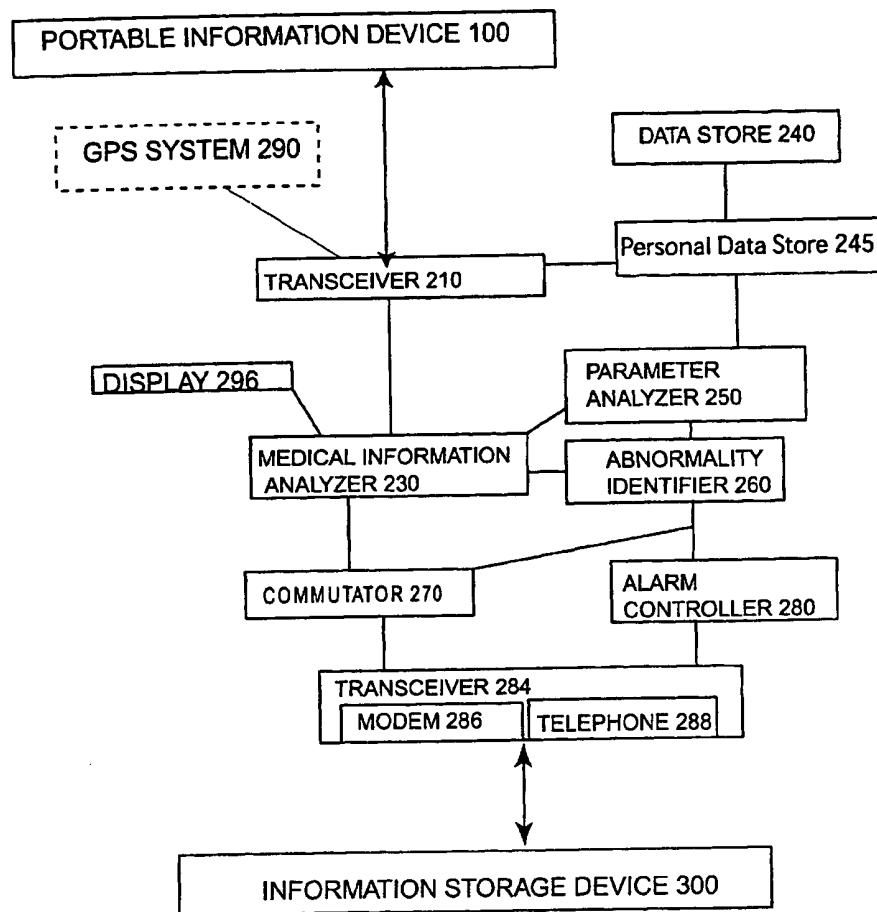


FIG. 5



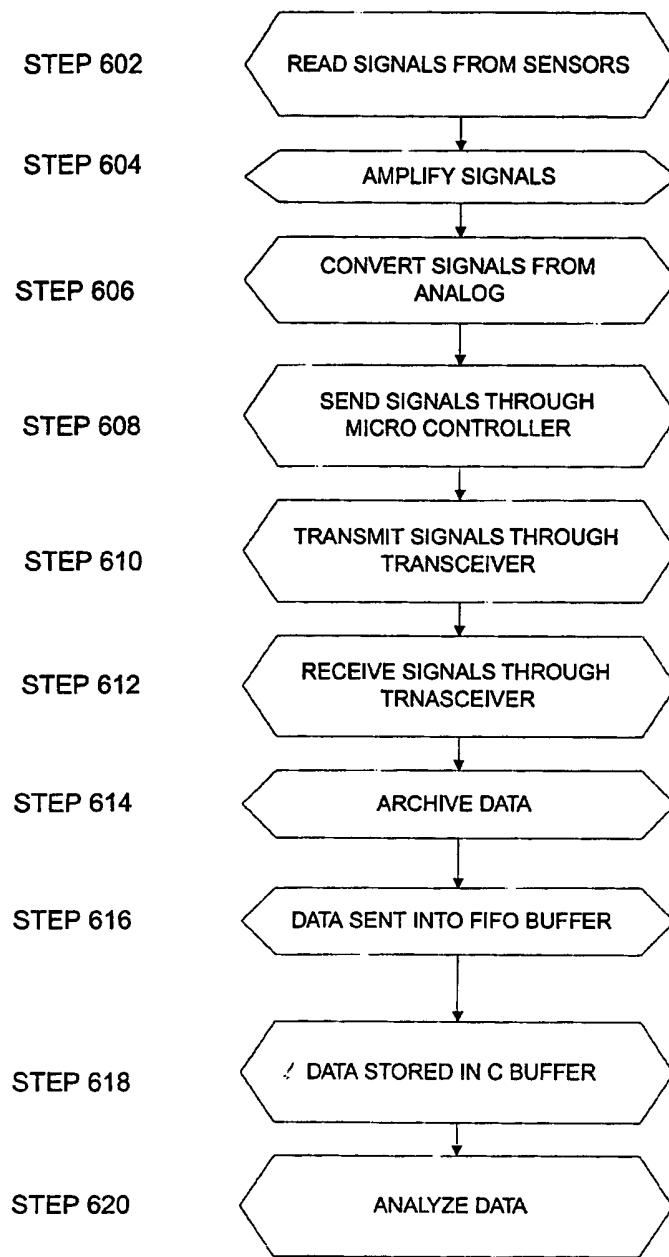


FIG. 6

FIG. 7A

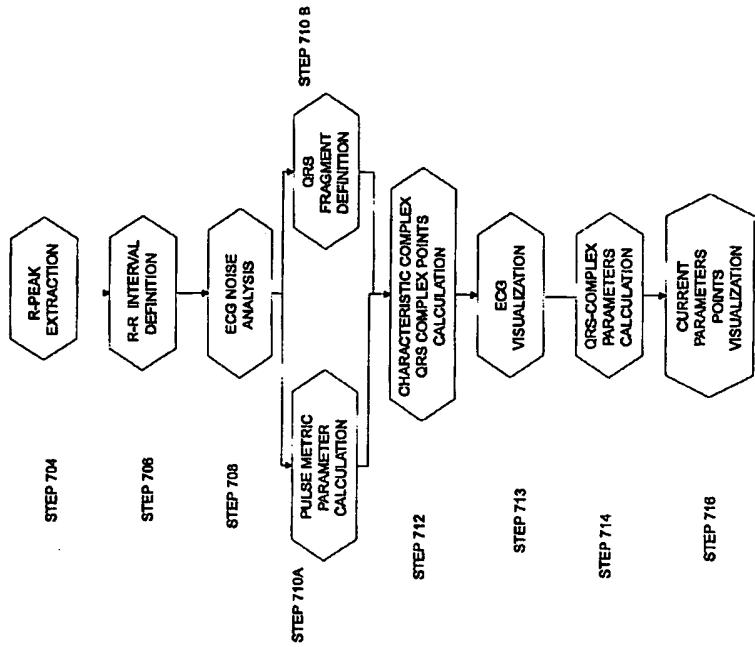


FIG. 7B

STEP 712A

CALCULATION OF
DOMINANT
CHARACTERISTIC
POINTS

STEP 712B

FILTERING AND
SMOOTHING

STEP 712C

CALCULATION OF
AUXILIARY
CHARACTERISTIC
POINTS

STEP 712D

CALCULATION OF ISOLINE

FIG. 8A

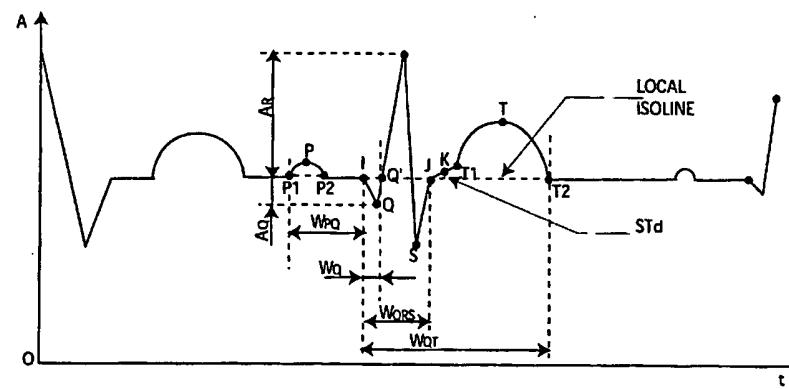
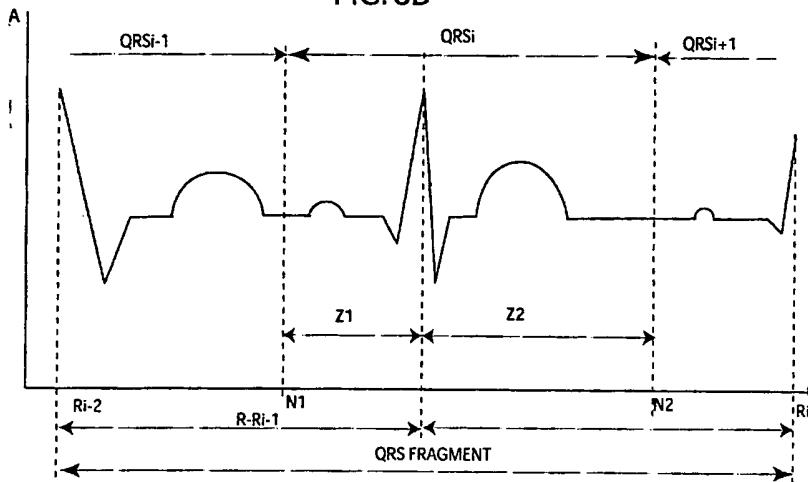


FIG. 8B



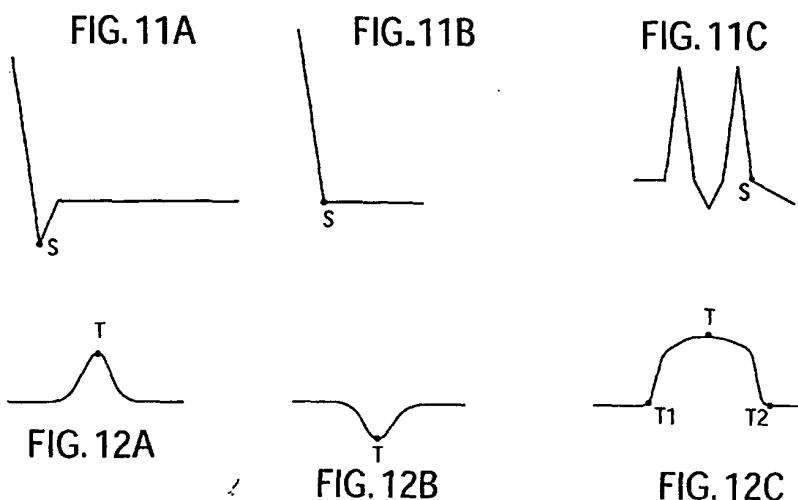
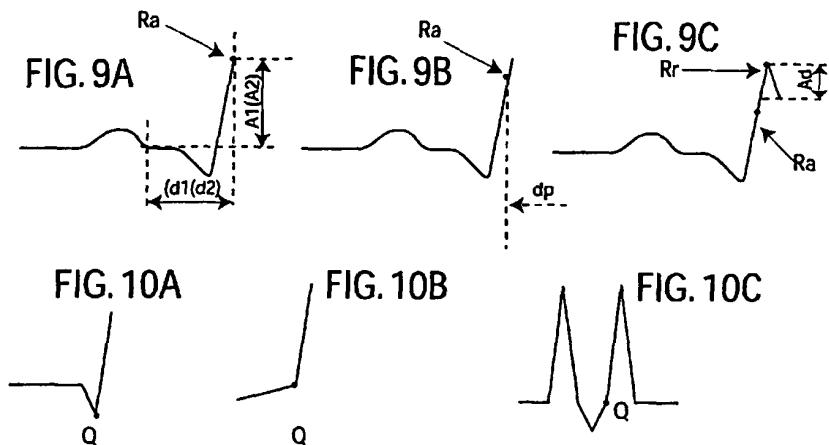


FIG. 13

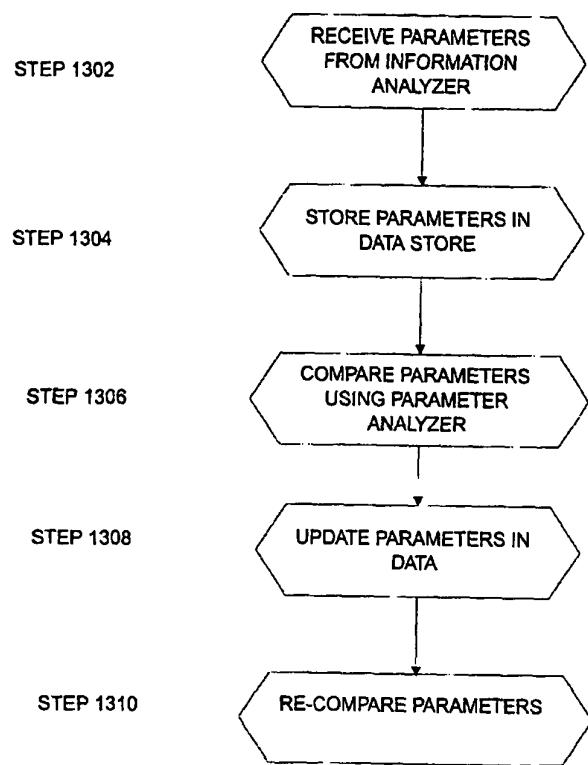


FIG. 14

Parametric value	Description
Pulse rate	Defined as average value of R-R- Interval of 4 last R-R- Intervals per 1 minute
Immediate alteration of pulse rate	Defined as difference between Pulse Rate calculated for the last 4 R-R- Intervals and Pulse Rate calculated for previous 4 R-R- Intervals (i = N-7...N-4): $P_d = P_N - P_{N-4}$
RR-Interval	Defined as a distance between 2 consecutive R-Peak (ms)
Premature beats	The number of extrasystoles within last 10 seconds.
Group of premature beats	The number of consecutive extrasystoles
The atrial fibrillation-flutter	$F = (F1 + F2) * X (\%)$, where: $F1$ – Extrasystole factor and $F2$ – Variability factor for the last 15 RR intervals
ST-Segment depression/elevation	Defined as a distance (mm) between point K and isoline of QRS-complex. Its value is averaged for last 10 QRS-complexes
T-wave inversion	Inversion of current T-peak is identified within localization of point T. Cardiac event "T-wave Inversion" is occurred if 4 consecutive inverse T-peak are received
Width of Q-wave	Distance between point I and Q' in ms
Ratio of amplitude Q-wave to amplitude R-wave	$A_{QR} = \frac{A_I - A_Q}{A_R - A_I} \cdot 100 \%$ A_{QR} value is averaged for the last 5 QRS-complexes
Amplitude of R-wave	Defined as difference between absolute values of point R amplitude and point I amplitude: $A_{Rd} = (A_R - A_I) \cdot 0.2$ (mm) A_{Rd} value is averaged for the last 5 QRS-complexes
Width of QT-interval	Defined as distance (ms) between point I of beginning of Q-peak and point T2-peak of the end of T-peak
Width of QRS-complex	Defined as the distance (ms) between point I and point J
Width of PQ-interval	W_{PQ} is defined as the distance (ms) between point P1 of beginning of P-peak and point I. W_{PQ} value is averaged for the last 5 QRS-complexes
Standard deviation of the average normal-to-normal R-R intervals	Sinus node depolarization calculated over a period of 5 min

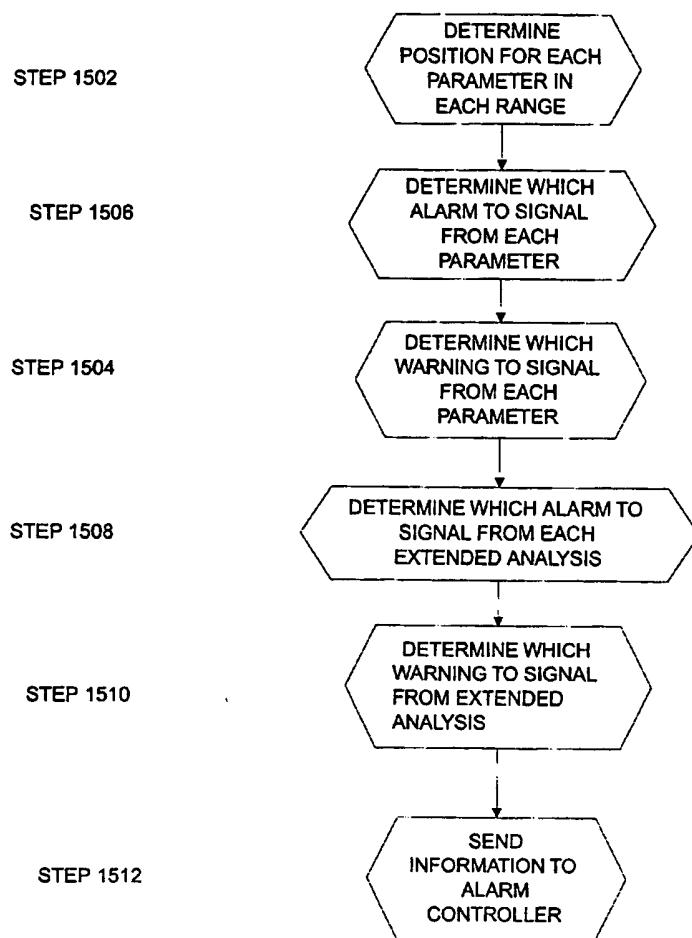


FIG. 15

FIG. 16a. Typical threshold parameters values

Warning	Alarm	Description
W_1	A_1	Pulse rate less than 50/40 bpm (during 4 QRS complexes)
W_2	A_2	Pulse rate more than 140/160 bpm (during 4 QRS complexes)
	A_3	Immediate alteration of pulse rate up, more than 40 bpm (during 4 QRS complexes)
	A_4	Immediate alteration of pulse rate down, more than 40 bpm (during 4 QRS complexes)
	A_5	R-R interval more than 2.5 sec
	A_6	Premature beats, repeated more than 1 in 10 sec
	A_7	2 consecutive premature beats
W_8	A_8	The atrial fibrillation-flutter > 20/30 %
W_9	A_9	ST-segment depression > 1.0/1.5 mm, measured at 80 ms from J-point
W_{10}	A_{10}	ST-segment elevation > 1.5/2.0 mm, measured at 80 ms from J-point
	A_{11}	T wave inversion = 1
W_{12}	A_{12}	Increase of Q wave > 30/40 ms
W_{13}	A_{13}	Increase of Q/R amplitude ratio > 20/30 %
W_{14}	A_{14}	Decreases of R-wave amplitude > 30/50 %
W_{15}	A_{15}	Increase of QT interval > 450/500 ms
	A_{16}	Sudden Increase of QT interval > 30 % from preceded
W_{17}	A_{17}	Increase of QRS duration > 110/120 ms
W_{18}	A_{18}	Increase of PQ interval > 180/200 ms
	GE_{A7}	Consecutive premature beats > 2
ST_{W9}	ST_{A9}	ST-segment depression > 1.5/2.0 mm, measured at 80 ms from J-point
ST_{W10}	ST_{A10}	ST-segment elevation > 2.0/2.5 mm, measured at 80 ms from J-point
W_G	A_G	Integrated Relative Risk of SCD or development of Myocardial infarction > 1.8/2.5

FIG. 16b. Pulse-metric parameters

Warning	Alarm	Description
W_1	A_1	Pulse rate less than $A_1(W_1)$ bpm (during 4 QRS complexes)
W_2	A_2	Pulse rate more than $A_2(W_2)$ bpm (during 4 QRS complexes)
	A_3	Immediate alteration of pulse rate up, more than A_3 bpm (during 4 QRS complexes)
	A_4	Immediate alteration of pulse rate down, more than A_4 bpm (during 4 QRS complexes)
	A_5	R-R interval more than A_5 sec
	A_6	Premature beats, repeated more than A_6 in 10 sec
	A_7	A_7 consecutive premature beats
W_8	A_8	The atrial fibrillation-flutter > $A_8(W_8)$ %

FIG. 16c. QRS parameters

Warning	Alarm	Description
W_9	A_9	ST-segment depression > $A_9(W_9)$ mm, measured at 80 ms from J-point
W_{10}	A_{10}	ST-segment elevation > $A_{10}(W_{10})$ mm, measured at 80 ms from J-point
A_{11}		T wave inversion = A_{11}
W_{12}	A_{12}	Increase of Q wave > $A_{12}(W_{12})$ ms
W_{13}	A_{13}	Increase of Q/R amplitude ratio > $A_{13}(W_{13})$ %
W_{14}	A_{14}	Decreases of R-wave amplitude > $A_{14}(W_{14})$ %
W_{15}	A_{15}	Increase of QT interval > $A_{15}(W_{15})$ ms
A_{16}		Sudden Increase of QT interval > A_{16} % from preceded
W_{17}	A_{17}	Increase of QRS duration > $A_{17}(W_{17})$ ms
W_{18}	A_{18}	Increase of PQ interval > $A_{18}(W_{18})$ ms

FIG. 16d. Extended pulse-metric parameters

Warning	Alarm	Description
	GE_{A7}	Consecutive premature beats > GE_{A7}

FIG. 16e. Extended QRS parameters

Warning	Alarm	Description
ST_{W9}	ST_{A9}	ST-segment depression > ST_{A9} mm, measured at 80 ms from J-point
ST_{W10}	ST_{A10}	ST-segment elevation > ST_{A10} mm, measured at 80 ms from J-point

FIG. 16f. Integrated parameters

Warning	Alarm	Description
W_G	A_G	Integrated Relative Risk of SCD or development of Myocardial Infarction > A_G

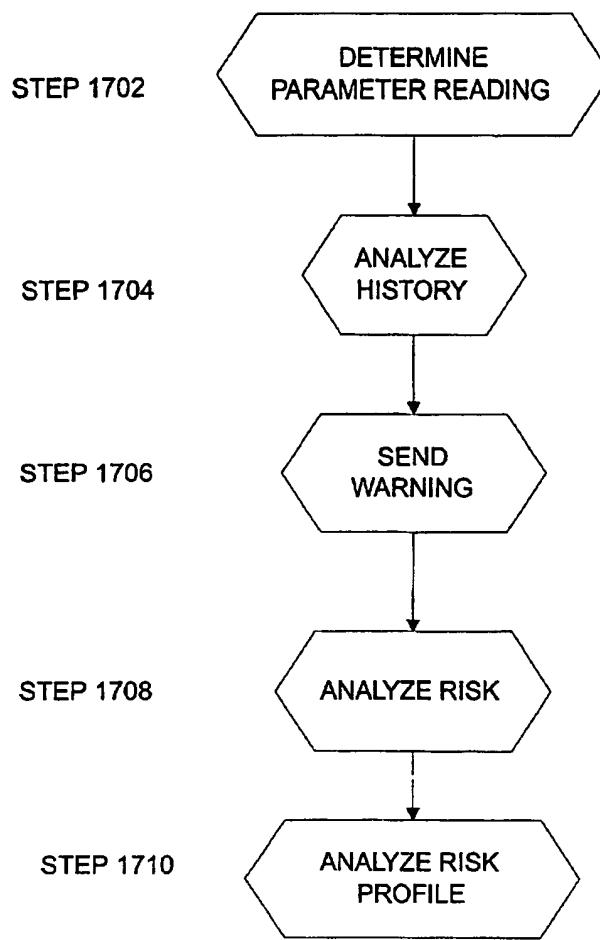


FIG. 17

FIG. 18

